5(3) SOV/79-29-9-55/76

AUTHORS: Grekov, A. P., Kulakova, L. N., Shvayka, O. P.

TITLE: Investigations in the Field of Organic Scintillators. IV. Synthesis of Para-substituted 2,5-Diphenyl-1,3,4-oxadiazole

PERIODICAL: Zhurnal obshchey khimii, 1959, Vol 29, Nr 9, pp 3054-3058 (USSR)

ABSTRACT: In order to investigate systematically the relation between the scintillating properties and the structure of the oxadiazole derivatives the authors synthesized the following hitherto unknown derivatives of 2,5-diphenyl-1,3,4-oxadiazole with different functional substituents which are in the para-position of one of the phenyl cycles:

R, R = NO_2, NH_2, $NHCOCH_3$, OH, OCH_3, $OCOCH_3$, Cl, Br, J.

The synthesis of such compounds usually takes place according to the general scheme (I) for the compounds of this type; in the case of the oxadiazole derivatives, however, in which the

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Investigations in the Field of Organic Scintillators. IV. Synthesis of Para-substituted 2,5-Diphenyl-1,3,4-oxadiazole

functional groups (like the amino and the oxy group) may react by themselves with the reagents to be used , it cannot be employed. Therefore, in such cases, scheme (2) hitherto not applied for the synthesis of similar compounds was used. In this scheme (2) the stage of the reduction of the nitro group to the amino group and their substitution by other functional substituents is of interest. Since, as had been found earlier, the oxadiazole ring is sensitive to the action of aqueous mineral acid and alkali solution and, especially at high temperatures, decomposes first into the corresponding hydrazide and then into the hydrazine and aromatic acids, it was not possible to obtain in sufficient yield 2-phenyl-5-(4-aminophenyl)-1,3,4 oxadiazole by the reduction of the corresponding oxadiazole derivative in acid and alkaline medium. Only phenyl hydrazine used as reducing agent produced good yields. The amino group which is in para-position in the 2,5-diphenyl-1,3,4-oxadiazole is very reactive, and thus permitted the synthesis of many derivatives of 1,3,4-oxadiazole important with respect to scintillation. 9 hitherto unknown p-substituted

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Investigations in the Field of Organic Scintillators. IV. Synthesis of Para-substituted 2,5-Diphenyl-1,3,4-oxadiazole

2,5-diphenyl-1,3,4-oxadiazoles have been synthesized so far. There are 5 references.

ASSOCIATION: Khar'kovskiy filial Instituta reaktivov (Khar'kov Branch of the Institute of Reagents)

SUBMITTED: July 21, 1958

Card 3/3

86510

S/079/60/030/011/019/026
B001/B055

53610 1375, 2209, 1153

AUTHORS: Grekov, A. P. and Shvayka, O. P.

TITLE: Synthesis of Several Functional Derivatives of 2,5-Diphenyl 1,3,4-Oxadiazoles

PERIODICAL: Zhurnal obshchey khimii, 1960, Vol. 30, No. 11, pp. 3802-3806

TEXT: Basing on their earlier papers (Refs. 1-6) concerning the synthesis of scintillation substances, the authors in the present work describe the synthesis of new functionally substituted compounds of this type. The following scheme, described in Refs. 2 and 8, was applied for the preparation of para-substituted 2,5-diphenyl 1,3,4-oxadiazoles with the substituents F, SCH_3, CH_3, iso-OC_3H_7, $N(CH_3)_2$, COOH, and $COOC_2H_5$:

$$Ar\text{-}COCl + H_2NNHCO\text{-}Ar' \xrightarrow{C_5H_5N} Ar\text{-}CO(NH)_2CO\text{-}Ar' \xrightarrow{POCl_3} Ar\text{-}CCl{=}N\text{-}N{=}CCl\text{-}Ar' \xrightarrow{H_2O} Ar\text{-}C(=O)\text{-}N{=}N\text{-}C(=O)\text{-}Ar' \quad (1)$$

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Synthesis of Several Functional Derivatives of 2,5-Diphenyl 1,3,4-Oxadiazoles

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of isomeric monofunctional 2,5-diphenyl 1,3,4-oxadiazole derivatives. In this way, the authors obtained the first representatives of ortho- and meta-substituted oxadiazoles with nitro, chlorine, methoxy, and methyl groups as substituents. The reaction conditions and yields did not differ significantly from those of the para-substituted oxadiazoles. This method is therefore generally applicable for the preparation of functional oxadiazole derivatives and the diaroyl hydrazides used as initial compounds. Contrary to published data (Ref. 8), the diaroyl hydrazides form at low temperatures also, higher temperatures causing formation of considerable quantities of by-products, i.e. symmetric diaroyl hydrazides of the types $(C_6H_5\text{-}CONH)_2$ and $(X\text{-}C_6H_4\text{-}CONH)_2$, especially in presence of electrophilic substituents in the phenyl ring, such as NO_2 and $COOC_2H_5$ (Refs. 8 and 9). The application of scheme (1) may be complicated by reaction of the functional group with the reactants. This can be avoided, however, by transforming the functional substituent of the oxadiazole molecule into another group, i.e. reduction to amines, Sandmeyer reaction, conversion of nitrile to amide (Ref. 10). Saponification of the ester group in 2-(p-carbethoxy

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phenyl) 5-phenyl 1,3,4-oxadiazole, for the purpose of obtaining the free acid, however, was accompanied by oxadiazole ring cleavage, which led to the formation of 1-(p-carbethoxy benzoyl) 2-benzoyl hydrazine. On treatment with phosphorus oxychloride, the latter forms compound (I), which cyclizises with H_2O. Table 1 gives a list of the diaroyl hydrazines synthesized, and Table 2 one of the synthesized oxadiazoles of the type $C_6H_5-C=N-N=C-C_6H_4-X$ (O ring). There are 2 tables and 13 references: 8 Soviet, 4 US, and 1 German.

ASSOCIATION: Vsesoyuznyy nauchno-issledovatel'skiy institut khimicheskikh reaktivov (Khar'kovskiy filial) (All-Union Scientific Research Institute of Chemical Reagents (Khar'kov Branch))

SUBMITTED: December 26, 1959

Card 3/3

SHVAYKA, O.P.; KONOVCHUK, M.S.; PROTSENKO, Ye.G. [Protsenko, IE.H.]

Automatic control of the nitrosation of phenylhydroxylamine in the production of Cupferron. Khim. prom. [Ukr.] no.1: 67-68 Ja-Mr'63 (MIRA 17:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov, stsintsilyatsionnykh materialov i osobenno chistykh khimicheskikh veshchestv.

L 31838-65 EWT(m)/EPF(c)/EWP(j)/EWA(c) Pc-4/Pr-4 RM

ACCESSION NR: AR5005656 S/0058/64/000/012/D024/D024

SOURCE: Ref. zh. Fizika, Abs. 12D168

AUTHORS: Shvayka, O. P.; Grekov, A. P. 32 B 9

TITLE: Absorption spectra of functional substitutes of 2-phenyl-1,3,4-oxadiazole

CITED SOURCE: Sb. Stsintillyatory i stsintillyats. materialy. Vyp. 3. Khar'kov, Khar'kovsk. un-t, 1963, 17-20

TOPIC TAGS: ultraviolet spectrum, absorption spectrum, oxadiazole, phenyl

TRANSLATION: The ultraviolet absorption spectra of ethanol and heptane solutions of 2-phenylene-1,3,4-oxadiazoles were investigated in the 220-320 nm region. Spectral curves and tables of maxima and of the absorption coefficients are given. The influence of the substitutes in the para-position on the position of the absorption maximum is discussed. The presence of one absorption band, which does not change its structure upon introduction of a substitute, and the weak interaction with the polar solvent, which leads to an insignificant bathochromic shift,

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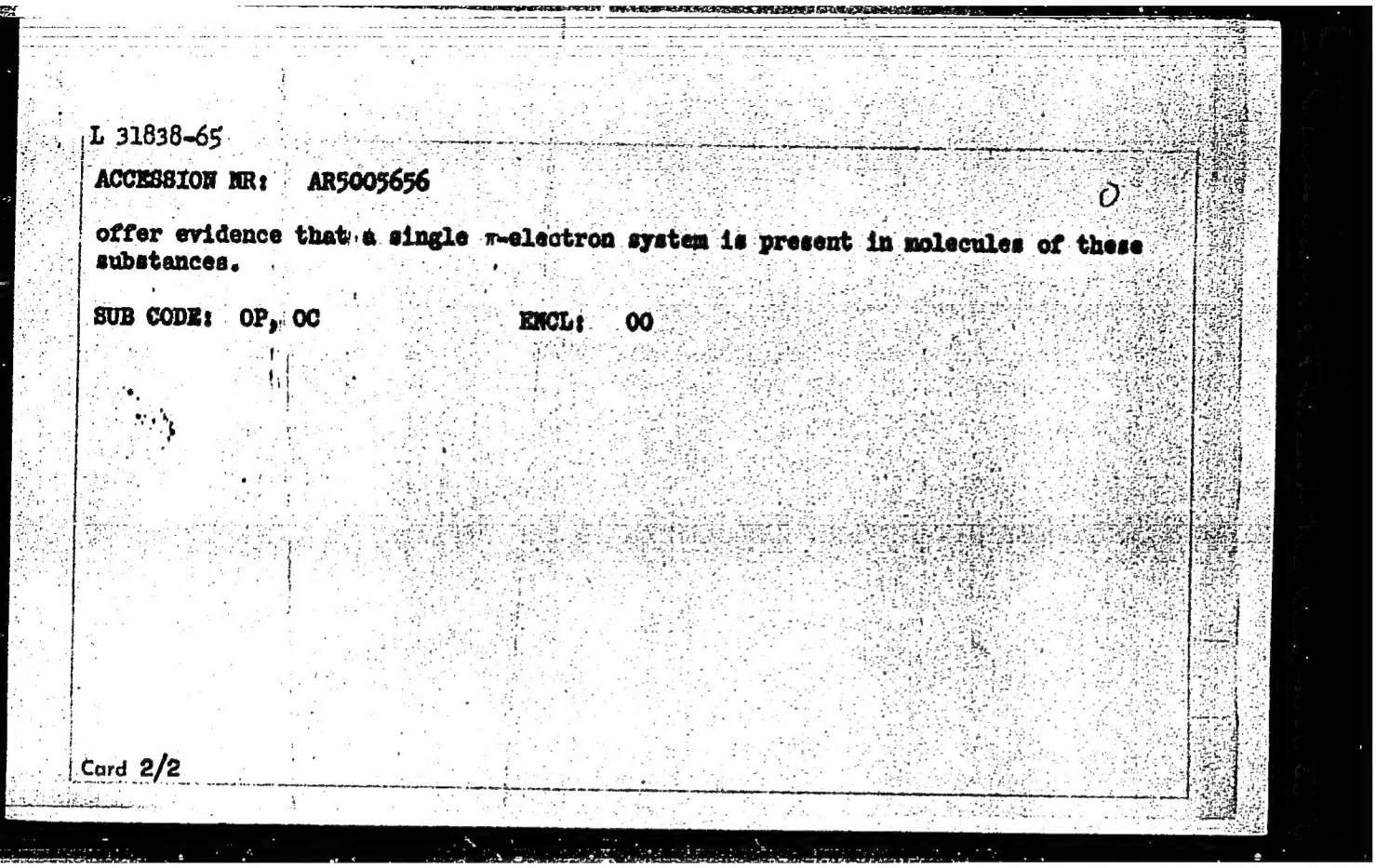

L 31838-65

ACCESSION NR: AR5005656

offer evidence that a single π-electron system is present in molecules of these substances.

SUB CODE: OP, OC ENCL: 00

Card 2/2

KUTSYNA, L.M.; OGURTSOVA, L.A.; GREKOV, A.P.; SHVAYKA, O.P.

Use of oxadiazole derivatives as scintillation activators in various solvents. Opt. i spektr. 15 no.3:438-440 S '63.
(MIRA 16:10)

CHVALYKA, G.P.; [illegible]

Quantitative determination of N-arylhydroxylamines by potentiometric titration with sodium nitrite. Zhur. anal. khim. 18 no.3:410-411 Mr'63. (MIRA 17:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov, stsintillyatsionnykh materialov i osobo chistykh khimicheskikh veshchestv, Khar'kov.

SHVAYKA, O.P.; MAKARENKO, Yu.I.

Hydrazides and acyl derivatives of hydrazides of methacrylic and isobutyric acids. Zhur.ob.khim. 33 no.4:1233-1236 Ap '63. (MIRA 16:5)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov, stsintillyatsionnykh materialov, i osobo chistykh khimicheskikh veshchestv, g. Khar'kov.
(Hydrazides) (Methacrylic acid) (Isobutyric acid)

SHVAYKA, O. P.; MNATSAKANOVA, T. R.

Oxadiazole derivatives. Part 1: Synthesis and properties of bromalkylaryl-, styrylaryl-, and diaryl derivatives of 1,3,4 -oxadiazole. Zhur. ob. Khim. 34 no.6:2061-2065 Je '64. (MIRA 17:7)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov, stsintillyatsionnykh materialov i osobo chistykh khimicheskikh veshchestv.

L 41219-65 EWT(m)/EPF(c)/EWP(j)/EWA(c) Pc-4/Pr-4 RM

ACCESSION NR: AR5005655 S/0058/64/000/012/D024/D024

32
B

SOURCE: Ref. zh. Fizika, Abs. 12D165

AUTHORS: Grekov, A. P.; Shvayka, O. P.

TITLE: Absorption spectra of monofunctional substituted 2,5-diphenyl-1,3,4-oxadiazole

CITED SOURCE: Sb. Stsintillyatory i stsintillyats. materialy. Vyp. 3, Khar'kov, Khar'kovsk. un-t, 1963, 5-14

TOPIC TAGS: ultraviolet spectrum, absorption spectrum, oxadiazole, diphenyl

TRANSLATION: The ultraviolet absorption spectra of substituted 2,5-diphenyl-1,3,4-oxadiazole are described and the influence of the systematic series of functional substitutes on the electronic structure of their molecules as a whole is considered.

SUB CODE: OP, OC ENCL: 00

Card 1/1

NAGORNAYA, L.I.; MNATSAKANOVA, T.R.; GREKOV, A.P.; SHVAYKA, O.P.

Photoluminescence and scintillation properties of certain 1,3,4-oxadiazole derivatives. Opt. i spektr. 18 no.3:403-406 Mr '65. (MIRA 18:5)

SHVAYKA, O.P.; KLIMISHA, G.P. [Klymysha, H.P.]

Behavior of oxazoles in some electrophilic substitution reactions.
Dop. AN URSR no.11:1479-1482 '65.
(MIRA 18:12)

1. Vsesoyuznyy nauchno-issledovatel'skiy institut monokristallov i osobo chistykh khimicheskikh veshchestv.

USSR/Human and Animal Physiology (Normal and Pathological). T
Internal Secretion. Thyroid Gland.

Abs Jour: Ref Zhur-Biol., No 17, 1958, 79734.

Author : Shvayko, I.I.
Inst :
Title : Influence of Salts of Potassium and Calcium on the Function of the Thyroid Gland in Rats.

Orig Pub: Vrachebnoye delo, 1957, No 5, 539-540.

Abstract: In the study, 6-8 months ♂ rats were sustained on a full-value ration. Some of the rats were given additional food: 40-80 mg/100 g Ca, or 20 mg/100 g K. The absorbtion of I^{131} and average content in the thyroid gland of I served as an indicator of the function of the thyroid gland (TG). With the introduction of Ca (especially calcium-glycerophosphate), the

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USSR/Human and Animal Physiology (Normal and Pathological).
Internal Secretion. Thyroid Gland.

Abs Jour: R f Zhur-Biol., No 17, 1958, 79734.

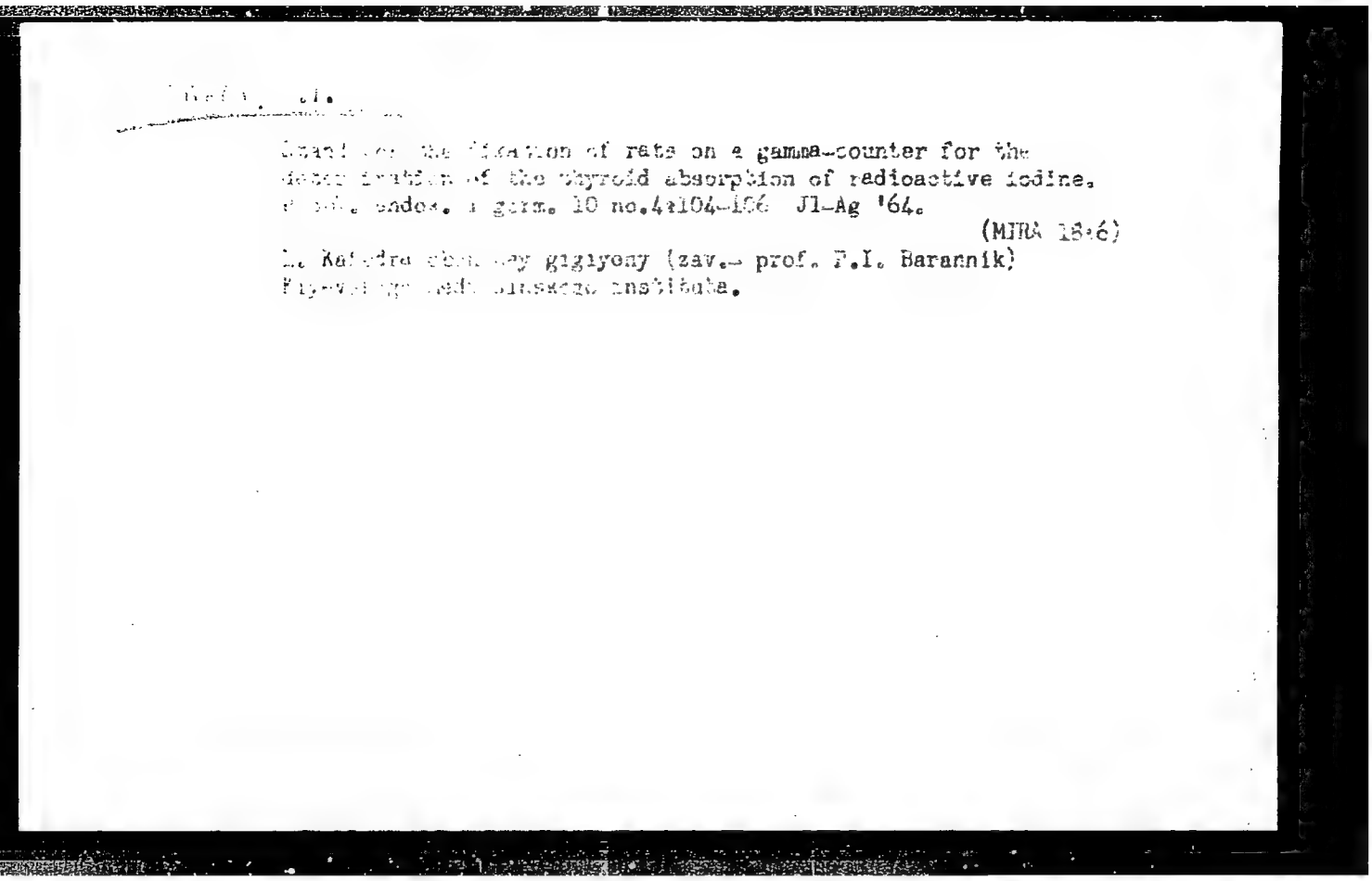
function of the TG increased: I^{131} accumulated faster and was released from the TG; the content of I in TG decreased. With the introduction of K, the function of the TG did not change.

Card : 2/2

VERZHIKOVSKAYA, N.V.; SHVAYKO, I.I.

Excess of manganese in food an the function of the thyroid gland in iodine insufficiency. Probl.endok.i gorm. 5 no.5:90-92 S-O '59. (MIRA 13:5)

1. Iz kafedry obshchey gigiyeny (zav. - prof. P.I. Barannik) Kiyevskogo meditsinskogo instituta.
(THYROID GLAND physiol.)
(IODINE deficiency)
(MANGANESE pharmacol.)



[illegible] ...i.

[illegible] the fixation of rats on a gamma-counter for the determination of the thyroid absorption of radioactive iodine. [illegible] endok. i gorm. 10 no.4:104-106 Jl-Ag '64.

(MIRA 18:6)

1. Kafedra obshchey gigiyeny (zav.- prof. F.I. Barannik) Pyatigorskogo meditsinskogo instituta.

ZHVAKO, I.I.

Effect of manganese on the thyroid gland in hypovitaminosis C. Vop. pit. 24 no.2:78-80 Mr-Ap '65. (MIRA 18:8)

1. Kafedra obshchey gigiyeny (zav. - prof. P.I.Barannik) Kiyevskogo meditsinskogo instituta.

MIRONOV, G.S.; GUSHCH, V.I.; SHVAYKO, K.M.

Effect of chlortetracycline on the bilirubin and cholesterol level of the blood serum in patients with acute bacillary dysentery. Antibiotiki 4 no.4:78-81 Jl-Ag '59.
(MIRA 12:11)

1. Kafedra infektsionnykh bolezney (nachal'nik - prof.P.A.Alisov) i kafedra propedevtiki vnutrennikh bolezney No.2 (nachal'nik - prof.I.T.Teplov) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova.
(DYSENTERY, BACILLARY blood)
(CHLORTETRACYCLINE ther)
(BILIRUBIN blood)
(CHOLESTEROL blood)

SHVAYKO, K. P.

Methods of planting and culture of sugar beets. K. P. Shvaiko (Exptl. Selection Sta., Uladovo-Lyulinetsk). *Zemledelie* 4, No. 3, 72-8(1956).—Planting in hills (44.5 × 44.5 cm.) on chernozem proved to be more effective with the various methods of fertilization, manure plus mineral fertilizer and mineral fertilizer alone. Manure alone had little advantage over the mineral fertilizer without manure. On the other hand manure alone was almost as good as manure + fertilizer.

L. S. Jolz

SHVAYKO, K.P., nauchnyy sotrudnik.

Factors affecting the wintering of wheat. Nauka i pered.op.v sel'khoz. 7 no.7:55-56 Jl '57. (MLRA 10:8)
(Wheat)

SHVAYKO, K.P.

Corn, the best fallow crop in sugar beet crop rotation. Zemledelie 23 no.11:34-36 N '61. (MIRA 14:11)

1. Uladovo-Lyulinetskaya opytno-selektsionnaya stantsiya.
(Fallowing) (Sugar beets) (Corn (Maize))

MIRONOV, G.S.; USHAKOV, B.N.; SHVAYKO, M.K.

Effect of chlortetracycline on blood protein fractions in patients with mild forms of acute bacillary dysentery. Antibiotiki 5 no.6: 41-45 N-D '60. (MIRA 14:3)

1. Kafedra infektsionnykh bolezney (nachal'nik - prof. P.A.Alisov), kafedra fakul'tetskoy terapii No.2 (nachal'nik - prof.A.L.Landa) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova.
(BLOOD PROTEINS) (DYSENTERY)
(AUREOMYCIN)

MIRONOV, G. S., podpolkovnik meditsinskoy sluzhby; SHVAYKO, M. K., podpolkovnik meditsinskoy sluzhby; USHAKOV, B. N., kapitan meditsinskoy sluzhby

Influence of chlortetracycline on the quantity of blood protein fractions in patients with acute bacillary dysentery. Voen.-med. zhur. no.12:63-64 D '61. (MIRA 15:7)

(CHLORTETRACYCLINE) (BLOOD PROTEINS)
(DYSENTERY)

SHVAYKO, M. K., (Lieutenant Colonel of the Medical Service); USHAKOV, B.N., (Captain of the Medical Service); MIRONOV, G. S., (Lieutenant Colonel of the Medical Service)

"The Effect of Chlortetracycline on the Content of Blood Protein Fractions in Patients with Acute Bacterial Dysentery"

Voyenno-Meditsinskiy Zhurnal, No. 12, December 1961, pp 62-73

MIRONOV, G.S.; GUSHCH, V.I.; SHVAYKO, M.K.

Effect of chlortetracycline on the blood serum cholesterol and globulin level and on the adrenocortical function in mild forms of acute bacillary dysentery. Antibiotiki 7 no.1:39-41 Ja '62. (MIRA 15:2)

1. Kafedra infektsionnykh bolezney (nachal'nik - prof. P.A.Alisov), klinika gospital'noy i voyenno-morskoy terapii (nachal'nik - prof. Z.M.Volynskiy) Voyenno-meditsinskoy ordena Lenina akademii imeni S.M.Kirova.

(DYSENTERY) (AUREOMYCIN) (ADRENAL CORTEX
(CHOLESTEROL) (GLOBULIN)

L 04902-67 EWT(d)/EWP(1) IJP(c) GG/BB/GD
ACC NR: AT6028705 SOURCE CODE: UR/0000/66/000/000/0028/0032

AUTHOR: Nebolyubov, Yu. Ye.; Filippov, N. A.; Shvayko, N. V.

35
B+1

ORG: none

TITLE: A voltage-controlled pyramidal decoder 16

SOURCE: AN KirgSSR. Institut avtomatiki. Uzly i ustroystva diskretnogo deystviya (Digital elements and devices). Frunze, Izd-vo Ilim, 1966, 28-32

TOPIC TAGS: digital decoder, circuit design, digital analog converter

ABSTRACT: This decoder converts (decodes) an n-place N'-th number successively in time, beginning with the most significant and ending with the least significant digit, into a single-digit number having a certain number of signs. Decoder configuration is thus a tree of a certain degree of complexity, in which each branching (selection) node, including the first, has a number of branches which equals the number of signs in the given digital place. The speed of response of this decoder and the amount of current which it can deliver to the final control element, as well as the minimum current needed for switching the diodes of all degrees of selection, not including the last, are determined by the type of switching diode used in the circuit. This decoder may be used both with the unipolar circuit described in the article and

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with a dipolar one. In the latter case the number of switching diodes and resistors in the firing circuits is reduced almost by half. This decoder may be partially used in conjunction with other types of contactless decoders of both pulse and voltage types. In this case the switching diodes and the methods of turning them on may be used in several selection stages, but preferably in just the final one. Operation of two circuits is described in detail. Orig. art. has: 6 formulas and 2 figures.

SUB CODE: 09/ SUBM DATE: 22Feb66/ ORIG REF: 002

Card 2/2

28700

S/021/61/000/003/003/013
D274/D301

// 2314

AUTHORS: Leonov, M.Ya. and Shvayko, M.Yu.

TITLE: Elementary elastic-plastic deformations under torsion

PERIODICAL: Akademiya nauk UkrSSR. Dopovidi, no. 3, 1961, 282-285

TEXT: It is assumed that the body follows Hooke's law and that the displacement function $w(x,y)$ is continuous except on the surfaces $F_k(x,y)$ $(k = 1,2,...n)$. The stressed state is given by

$$\tau_{xz} = G\frac{\partial w}{\partial x}, \quad \tau_{yz} = G\frac{\partial w}{\partial y}, \quad (\sigma_x = \sigma_y = \sigma_z = \tau_{xy} = 0). \qquad (2)$$

The function $w(x,y)$ satisfied the Laplace equation. If the contour L is composed of a finite number of segments of the y-axis, the harmonic function w is given by

$$w(x,y) = \mathrm{Re}\left\{\frac{1}{2\pi i}\int_L \frac{\delta(s)dt}{t-\zeta}\right\}, \quad (\zeta = x + iy). \qquad (5)$$

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Elementary elastic-plastic...

For elastic stresses one obtains

$$\tau_{xz} - i\tau_{yz} = \frac{G}{2\pi} \int_L \frac{\mu(s)dt}{\zeta - t} . \qquad (6)$$

where

$$\mu(s) = \frac{d\delta(s)}{ds} .$$

The function $\mu(s)$ can be considered as the density of screw dislocations along the contour L. If the point ζ approaches the point t_o of the contour L ($t_o = iy$) from the left (right), one obtains (by Sokhots'kyy-Plemel's formula) from Eq. (6),

$$\tau_{xz}(0,y) - i\tau_{yz}(\pm 0,y) = \frac{G}{2\pi} \int_L \frac{\mu(s)ds}{y - s} \pm i \frac{G}{2} \mu(y). \qquad (7)$$

If $\mu(-y) = -\mu(y)$ and L is symmetrical with respect to the x-axis, one obtains $\tau_{yz}(x,0) = 0$, i.e. the plane $y = 0$ is stress-free. The space can be divided by that plane without changing the stressed

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state. Elementary plastic displacements under torsion are considered. It is assumed that before the appearance of plastic deformations, the maximum stress attains its limiting value τ_m at a single point of the contour only. The depth h (see Figure[m]) of the plastic displacement is considered small in comparison with the cross-section of the body; hence the latter is considered a half-space. One denotes by $w^0(x,y)$, τ^0_{xz}, τ^0_{yz} the displacement and stresses in the absence of plastic deformations, and by $w^{(1)}(x,y)$, $\tau^{(1)}_{xz}$, $\tau^{(1)}_{yz}$ the displacement and stresses due to plastic deformation.

By Eq. (7), $\mu(y)$ is given by

$$\frac{G}{2\pi}\int_{-h}^{h}\frac{\mu(s)}{y-s}ds = f(y), \qquad (9)$$

where

$$f(y) = \tau_c - \tau^0_{xz}(0,y). \qquad (10)$$

The general solution of Eq. (9) is

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Elementary elastic-plastic...

$$\mu(y) = \frac{2}{\pi G\sqrt{h^2 - y^2}} \int_{-h}^{h} \frac{\sqrt{h^2 - s^2}}{s - y} f(s)ds + \frac{c}{\sqrt{h^2 - y^2}} . \quad (11)$$

For $s < 0$, one should understand by $f(s)$ the mirror image of the function $\tau_c - \tau^o_{xz}(0,y)$. The constant c and the depth h are determined from the condition of boundedness of stress at the point $x = 0$, $y = h$. The displacement and stresses in the beam after the appearance of the plastic displacement, are given in terms of $\mu(y)$ by the formulae

$$w(x,y) = w^o(x,y) + \frac{1}{2\pi} \int_{-h}^{h} \mu(s)\,\text{arc tg}\,\frac{s - y}{x}\,ds,$$

$$\tau_{xz} - i\tau_{yz} = \tau^o_{xz} - i\tau^o_{yz} + \frac{Gi}{2\pi} \int_{-h}^{h} \frac{\mu(s)}{\zeta - is}\,ds. \quad (12)$$

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If

$$\tau^{o}_{xz}(0,y) = \alpha\tau_m - by, \quad (\alpha \geq 1,\ y \leq h) \qquad (13)$$

and α increases, the stresses can attain the limiting value τ_m at other points of the cross section. This value is attained at the points $x = \pm x_1$, $y = 0$ for

$$\alpha = \alpha_1 = \frac{\tau_c}{\tau_m} + \frac{2bx_1(\tau_m - \tau_c - ax_1^2)}{\tau_m\sqrt{4b^2x_1^2 - a^2(\tau_m - \tau_c - ax_1^2)^2}} . \qquad (16)$$

For certain values of α, τ_m is attained on planes which make an angle $\gamma = \arccos\frac{\tau_c}{\tau_m}$ with the y-axis, at the points $x = \pm 0$, $y = (0.552...)h$; the possible displacements are indicated in the Figure by dotted lines. There are 1 figure and 1 Soviet-bloc reference.

ASSOCIATION: Instytut mashynoznavstva to avtomatyky (Institute of the Science of Machines and Automation) AS Ukr SSR

LEONOV, M.Ya. [L'vov]; SHVAYKO, N.Yu. [Shvaiko, M.IU.] (L'vov)

Torsion of a cylindrical pipe having a cross section limited by eccentric circumferences. Prykl.mekh. 7 no.4:442-448 '61. (MIRA 14:9)

1. Institut mashinovedeniya i avtomatiki AN USSR.
(Torsion)

SHVAYKO, N.Yu.

Elastic plastic torsion of thin-walled rods with a closed profile. Nauch.zap.IMA. AN URSR. Ser.mashinoved. 7 no.7:72-80 '61. (MIRA 15:1)

(Elastic rods and wires)

S/198/62/008/002/005/011
D299/D301

24 4200
10 7000

AUTHOR: Shvayko, M.Yu. (L'viv)

TITLE: Elementary elastic-plastic deformation, on torsion of a circular cylinder

PERIODICAL: Prykladna mekhanika, v. 8, no. 2, 1962, 148 - 153

TEXT: With simplifying assumptions, the elastic-plastic problem reduces to the problem of an ideal elastic body, with displacements on certain surfaces being discontinuous. It is assumed that for the appearance of plastic-shear deformations, it is necessary that the tangential stresses should exceed a certain limit τ_m, and that the slip planes should be under the action of constant tangential stresses τ_c, oppositely directed to shear ($\tau_c \leq \tau_m$). It is required to determine the stress-strain state in a circular cylinder, under torsion by radial plastic shears, parallel to the axis of the beam. The stressed state can be determined by formula

$$\tau_{xz} - i\tau_{yz} = \frac{G}{2\pi} \int_L \frac{\mu(s)\,dt}{\zeta - t} \quad (\sigma_x = \sigma_y = \sigma_z = \tau_{xy} = 0), \qquad (3)$$

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Elementary elastic-plastic ...

where the function $\mu(s)$ can be regarded as the density of screw dislocations along the contour L. An equation is obtained to determine $\mu(s)$, as well as a formula for the depth h_1 of the first plastic shear. One obtains the following expression for the size of the first slip plane:

$$p = \frac{4q\left|(1+q)^2 \operatorname{arc\,tg}\sqrt{q} - (1-q)\sqrt{q}\right|}{\left|3(1+q^2)^2 + 4q(1-q+q^2)\right| \operatorname{arc\,tg}\sqrt{q} - 3(1-q)(1+q)^2\sqrt{q}}, \qquad (13)$$

where

$$p = \frac{a\tau_m}{\tau_c}; \quad q = 1 - \frac{h_1}{a}.$$

(a being the cylinder radius, and α - a constant which depends on the magnitude of the torque and the size of the cross-section). After calculations, one obtains for the tangential stresses

$$\tau_{xz}^{(1)} - i\tau_{yz}^{(1)} = \tau_c + i\alpha\tau_m \frac{\zeta}{a} + \frac{\zeta - ia}{\pi a\zeta^2}\left\{[iA_0 + A_1\zeta - iA_2\zeta^2] \times \right. \qquad (16)$$

$$\times \sqrt{(\zeta - in_1)(\zeta - im_1)} + (\zeta + ia)[i\tau_c a\zeta - a\tau_m(\zeta^2 - a^2)] \times$$

$$\left. \times \ln \frac{2\sqrt{am_1}\sqrt{(\zeta - in_1)(\zeta - im_1)} + i(a - m_1)(\zeta + ia)}{i(a + m_1)(ia - \zeta)} \right\}.$$

Card 2/3

34420;

40562
S/020/62/146/002/003/013
B104/B108

AUTHORS: Leonov, M. Ya., Member of the AS KirSSR, Shvayko, N. Yu.

TITLE: Elementary elastoplastic deformation of a twisted rod with a fine longitudinal groove on its surface

PERIODICAL: Akademiya nauk SSSR. Doklady, v. 146, no. 2, 1962, 325 - 327

TEXT: The state of stress and strain in the neighborhood of an elementary elastoplastic displacement on a twisted rod with a semicylindrical groove is investigated on the following assumptions: (1) The strength of the rod is reduced by torsion; (2) the radius of the groove is small as compared to that of the rod; (3) the surface of the rod is not curved in the vicinity of the groove (Fig. 1). The maximum tangential strength τ_{max} acts along the line AB during torsion until plastic deformation occurs ($\tau_{max} < \tau_m$). When $\tau_{max} > \tau_m$, displacement occurs down to a depth h; fracture is caused on the slip planes by screw dislocations with the density distribution $\mu(x)$ along the Ox-axis. The stresses and displacements are then described by

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$$\tau_{xz}^{(1)} - i\tau_{yz}^{(1)} = \frac{G}{2\pi i}\int_L \frac{\nu(s)}{\zeta - s} \quad (\sigma_x^{(1)} = \sigma_y^{(1)} = \sigma_z^{(1)} = \tau_{xy}^{(1)} = 0,\ \zeta = x + iy) \tag{1}$$

$$w^{(1)}(x, y) = \mathrm{Re}\left\{\frac{1}{2\pi i}\int_L \frac{\varkappa(s)\,ds}{s - \zeta}\right\} \quad (u^{(1)} = v^{(1)} = 0), \tag{2},$$

where the path of integration, L, has two sections, $\{-n,-m\}$ and $\{m,n\}$, and where $n = a + h$, $m = a^2/n$. The functions $\nu(s)$ and $\varkappa(s)$ are determined from the equations

$$\nu(s) = \begin{cases} \mu(s) & (a \leqslant s \leqslant n), \\ -\frac{a^2}{s^2}\mu\left(\frac{a^2}{s}\right) & (m \leqslant s \leqslant a), \end{cases} \quad \nu(-s) = -\nu(s); \tag{3}$$

$$\varkappa(s) = \int_{-n}^{s} \nu(\sigma)\,d\sigma. \tag{4}.$$

On the slip planes,

$$\tau_{yz}^{0}(x, 0) + \tau_{yz}^{(1)}(x, 0) = \tau_c \quad (a \leqslant x \leqslant a + h) \tag{5},$$

where τ_{yz}^{0} is the stress obtained without allowing for plastic deformation;

Card 2/4

τ_c is the lower limit of strength. The additional tangential stress owing to plastic displacement is then

$$\tau_{xz}^{(1)} - i\tau_{yz}^{(1)} = \frac{G}{2\pi i}\sqrt{(\xi^2 - n^2)(\xi^2 - m^2)}\int_L \frac{f(s)ds}{\sqrt{(n^2 - s^2)(s^2 - m^2)}(s - \xi)} \quad (10),$$

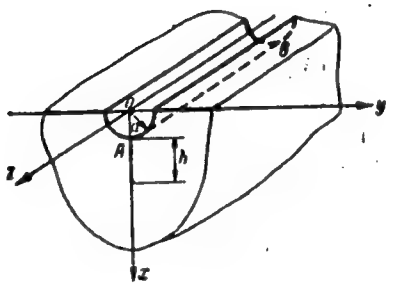
where $\sqrt{R(\xi)} = \sqrt{(\xi^2 - n^2)(\xi^2 - m^2)}$ is a holomorphous branch in the plane $\xi = x + iy$ with a section along L. There are 2 figures.

ASSOCIATION: Institut mashinovedeniya i avtomatiki Akademii nauk USSR (Institute of Science of Machines and Automation of the Academy of Sciences UkrSSR)

SUBMITTED: July 14, 1961

Card 3/4

Fig. 1



LEONOV, M.Ya.; SHVAYKO, N.Yu.

Elastic-plastic deformation caused by torsion of a rod with a shallow semicylindrical groove on the surface. Vop. mekh. real'. tver. tela no.1:5-12 '62. (MIRA 16:1)
(Elastic rods and wires) (Deformations (Mechanics))

LEONOV, M. Ya. (Frunze); SHVAYKO, N. Yu. (Frunze)

Helical dislocations in prismatic rods. Inzh. zhur. 2 no.4: 293-302 '62. (MIRA 16:1)

(Elastic rods and wires)

(13)

S/198/62/008/005/008/009
D234/D308

AUTHOR: Botte, O. V.

TITLE: Dissertations defended in 1961 at the Institutes of the Division of Technical Sciences, AS UkrSSR, in the field of mechanics

PERIODICAL: Akademiya nauk Ukrayins'koyi RSR. Instytut mekhaniky. Prikladna mekhanika, v. 8, no. 5, 1962, 571-575

TEXT: The following dissertations were presented by the collaborators of the above section and approved: For the degree of Candidate of Technical Sciences: Instytut mekhaniky (Institute of Mechanics): Vasyl' Mykolayovych Buyvol, Aspirant: 'Plane problems of the theory of elasticity for multiply-connected regions with cyclic symmetry', on March 16, 1961, at Dnipropetrovsk Universty. Yaroslav Mykhaylovich Hryhorenko, Junior Scientific Collaborator: 'Stressed state of round plates and conical shells of linearly varying thickness under asymmetric loads', on April 6, at Dnipropetrovsk University. Igor Tymofiyovych Selezov, Aspirant, 'Investigation of the propa-

Card 1/3

Dissertations defended in ... S/198/62/008/005/008/009
D234/D308

gation of elastic waves in plates and shells', on June 19, at Kyyivs'kyy politekhnichnyy instytut (Kiev Politechnic Institute). Andriy Feofanovych Ulitko, Aspirant, 'Solution of 3-dimensional problems of the theory of elasticity by the method of vector eigenfunctions', on September 26, at Kiev University. Mikhaylo Petrovych Petrenko, Junior Scientific Collaborator, 'Transverse and longitudinal vibrations in short rods of constant and variable thickness, due to impacts', on October 24, at Kiev University. Mariya Dmytrivna Synyavs'ka, Junior Scientific Collaborator, 'Increase of wear resistance of piston rings of integral combustion engines with the aid of galvanic coating', on October 24, at Kyyivs'kyy avtomobil'no dorozhnyy instytut (Kiev Institute of Automobiles and Highways). Heorkiy Ivanovych Dybenko, Engineer, 'Change of strength and deformability of ДСП (DSP) plastics in time at increased temperatures', on November 28, at Kiev Institute of Automobiles and Highways. For the degree of Doctor of Technical Sciences: Instytut elektrozvaryuvannya im. Ye. O. Patona (Institute of Electric Welding imeni Ye. O. Paton): Boris Oleksiyovych Movchan, Senior Scientific Collaborator, Candidate of Technical Sciences, 'Microscopic

Card 2/3

Dissertations defended in ...

inhomogeneities in cast alloys', on May 16, at the Siberian sections of AS USSR. For the degree of Candidate of Technical Sciences: Instytut mashynoznavstva ta avtomatyky (Institute of Machine Science and Automation): Hryhoriy Semenovyen Kit, Junior Scientific Collaborator, 'Approximate solution of the problem of free torsion', on March 16, at Dnipropetrovsk University. Hryhoriy Vasyl'ovych Plyatsko, Junior Scientific Collaborator, 'Nonstationary problems of heat conduction and thermoelasticity', on April 20, at the Institute of Mechanics of AS UkrSSR. Mykola Yuriyovych Shvayko, Aspirant, 'Some problems of elastoplastic torsion of prismatic rods', on December 25, at L'viv University. Instytut metalokeramiky i spetsial'nykh splaviv (Institute of Metal Ceramics and Special Alloys): Volodymyr Ivanovych Kovpak, Aspirant: 'Investigation of durable strength during programmed change of load and temperature', on October 23, at Kiev Polytechnic Institute.

Card 3/3

LEONOV, Mikhail Yakovlevich. Prinimali uchastiye: ZORIY, L.M.; CHERNUKHA, Yu.A.; SHVAYKO, N.Yu.; IVASHCHENKO, A.N.; LIBATSKIY, L.L.; BURAK, Ya.I.; RUSINKO, K.N.; FOMENKO, V.L., red.izd-va; ANOKHINA, M.G., tekhn. red.

[Fundamentals of the mechanics of an elastic solid] Osnovy mekhaniki uprugogo tela. Frunze, Izd-vo AN Kirgizskoi SSR. No.1. 1963. 328 p. (MIRA 16:12)

(Elastic solids)

LEBEDEV, Nikolay Yakovlevich; RUDNEV, Konstantin Nikolayevich; CHVARKO, Nikolay Yur'yevich; GUROVICH, Viktor Tsalevich; RYAZIN, P.A., otv. red.

[Problems of strength and elasticity] Voprosy prochnosti i plastichnosti. Frunze, Izd-vo AN Kirg.SSR, 1964. 81 p. (MIRA 17:8)

1. AN Kirgizskoy SSR, Frunze. Institut fiziki, matematiki i mekhaniki.

L 21079-65 EWT(1) AEDC(a)/ASD(f)-3 S/0020/64/159/005/1007/1010
ACCESSION NR: AP5001507

AUTHOR: Leonov, M. Ya. (Academician AN KirgSSR); Shvayko, N. Yu.

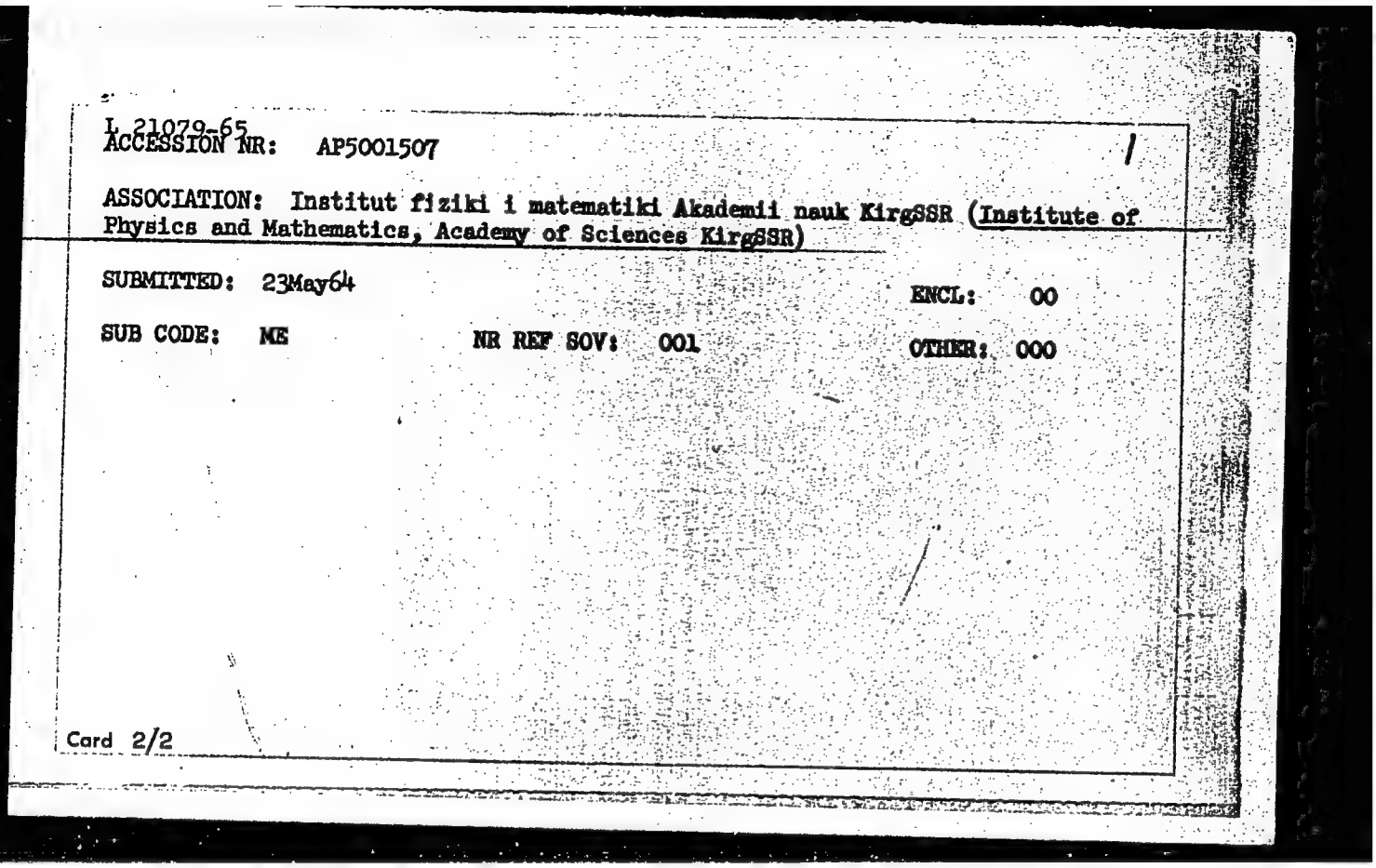
TITLE: Complex plane deformation

SOURCE: AN SSSR. Doklady, v. 159, no. 5, 1964, 1007-1010

TOPIC TAGS: plastic deformation, plane deformation, slip velocity

ABSTRACT: The authors investigate plastic deformation which has components in only two dimensions (plane deformation) and assume that this deformation is monotonic, i.e., the intensity of the slip increases with time. It is shown that such a monotonic deformation is possible when the directions of the principal stresses rotate with a certain limited speed. The plastic deformation is completely defined by a stress tensor at a given instant of time, if the maximum tangential stress is a monotonically increasing function of the time and if the speed of rotation of its direction is bounded. The Bauschinger effect and arbitrary continuous plastic deformation are considered as examples. Orig. art. has: 4 figures and 20 formulas.

Card 1/2



L 21079-65
ACCESSION NR: AP5001507

ASSOCIATION: Institut fiziki i matematiki Akademii nauk KirgSSR (Institute of Physics and Mathematics, Academy of Sciences KirgSSR)

SUBMITTED: 23May64 ENCL: 00

SUB CODE: ME NR REF SOV: 001 OTHER: 000

Card 2/2

LEONOV, M. Ya., akademik; SHVAYKO, N. Yu.

Complex plane strain. Dokl. AN SSSR 159 no.5:1007-1010 D '64
(MIRA 18:1)

1. Institut fiziki i matematiki AN KirgSSR. 2. AN KirgSSR (for Leonov).

ACC NR: AP6036836 SOURCE CODE: UR/0020/66/171/002/0306/0309

AUTHOR: Leonov, M. Ya. (Academician AN KirgSSR); Shvayko, N. Yu.

ORG: Institute for Physics and Mathematics, Academy of Sciences KirgSSR (Institut fiziki i matematiki Akademii Nauk KirgSSR)

TITLE: Concerning the dependence between stresses and strains in the vicinity of the yield point of the loading curve

SOURCE: AN SSSR. Doklady, v. 171, no. 2, 1966, 306-309

TOPIC TAGS: elasticity theory, elastic deformation, plastic deformation, yield stress, mechanics

ABSTRACT: The paper deals with the theory of the stress-strain relationship in the immediate vicinity of the yield point upon two-dimensional plastic deformation. It is assumed that the kink of the curve occurs after monotonic loading. The treatment is based on the mathematical model suggested by the authors in a previous paper (Doklady Akad. Nauk SSSR 159, No. 5 (1964). Under certain additional assumptions, the obtained results can be extended to the three-dimensional case. This is done on the basis of the isotropy postulate formulated by A. A. Il'yushin in Plasticity (Plastichnost'), published by the Academy of Sci. SSSR, 1963, and by using the transition from vectors to tensors. As a result, the expressions for the components of the rate of plastic

Card 1/2 UDC: 539.37

ACC NR: AP6036836

deformation immediately behind the yield point are obtained. Orig. art. has: 2 figures and 16 equations.

SUB CODE: 20/ SUBM DATE: 160ct65/ ORIG REF: 002

Card 2/2

L 41605-65 EWT(m)/EPF(c)/EWP(j)/T/EWA(c) Pc-4/Pr-4 IJP(c) RM

ACCESSION NR: AR5005637 S/0081/64/000/022/B049/B049

SOURCE: Ref. zh. Khimiya, Abs. 22B328

AUTHOR: Shvayka, O.P.; Grekov, A.P.

TITLE: The scintillation effectiveness of 1, 3, 4-oxadiazole derivatives

CITED SOURCE: Sb. Stsintillyatory i stsintillyats. materialy. Khar'kov, Khar'kovsk. un-t, 1963, 130-132

TOPIC TAGS: scintillation additive, scintillation counter, gamma ray, oxadiazole derivative, electron donor group, nitrogen scavenging, photoelectric current, radioisotope

TRANSLATION: Compounds with electron donor groups are more effective as scintillation additives to toluene than their analogs with electron acceptor groups. The most effective compound is 2-(p-dimethylaminophenol)-5-phenyl-1,3, 4-oxadiazole. Isopropoxy derivatives are significantly less effective than the corresponding methoxy compounds. The effectiveness can be decreased by the development of unsaturated structural elements in the substituent groups. The p-isomers are more effective than the o- and m-isomers. No successful additives had been found among the diaryl derivatives. The scintillation effectiveness is increased by scavenging with nitrogen, and concentration

Card 1/2

L 41605-65
ACCESSION NR: AR5005637

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quenching is insignificant up to 10 g/liter. The additives were compared by means of an FEU on the basis of the photoelectric current produced by gamma irradiation from Ag-110. The reagents were purified chromatographically until constancy of the absorption spectra.
I. Keirim-Markus

ENCL: 00 SUB CODE: GC, OC

mcl
Card 2/2

Shvayko V.

USSR/General Problems of Pathology - Inflammation. T-1

Abs Jour : Ref Zhur - Biol., No 4, 1958, 17155

Author : Shvayko, V., Terentseva, V.
Inst :
Title : The Reaction of the Birds to Subcutaneous and Intramuscular Injections of Purulent Exudate.

Orig Pub : Sb. nauchno-issled. rabot stud. Stavropol'sk. s-kh. in-t, 1956, vyp. 4, 113-114.

Abstract : No abstract.

Card 1/1

TRUSHKOV, A.; SHVAYK, Z.

New norms need specifications. Avt.dor. 28 no.7:25 Jl '65.
(MIRA 18:8)

USSR/Farm Animals. Small Horned Stock.

Abs Jour: Ref Zhur-Biol., No 20, 1958, 92584.

Author : Polyakov, E.M., Shvayko, V.F.
Inst : Stavropol Agricultural Institute.
Title : Anatomy of Certain Arterial Vessels in the Intercalary Section of the Systemic Circulation in Soviet Merino Sheep.

Orig Pub: Sb. nauchno-issled. rabot. stud. Stavropol'sk. s.-kh. in-ta, 1956, vyp. 4, 102-103.

Abstract: It was demonstrated in 6 sheep that the splanchnic and anterior mesenteric arteries leave the abdominal aorta by a common trunk, 0.8 - 5 cm long. The posterior mesenteric artery usually leaves the abdominal aorta independently at the level of the posterior limbus of the sixth lumbar vertebra. The diaphragmatic caudal arteries

Card : 1/2

SHVAYKO, V.P.

"Investigation of the Effect of Lithium Minerals on the Properties of China." Cand Tech Sci, All Union Sci Res Inst of Glass, Min Construction Materials Industry USSR, Moscow, 1955. (KL, No 15, Apr 55)

SO: Sum. No. 704, 2 Nov 55 - Survey of Scientific and Technical Dissertations Defended at USSR Higher Educational Institutions (16).

SHVAYKO, V.P.

1407. Porcelain containing lithium. S. G. TUMANOV and V. P. SHVAIKO (*Glass & Ceramics*, Moscow, 13, No. 1, 11, 1933). In Russian. The influence of Li compounds on the maturing temperature of domestic porcelain was investigated. The addition of 3·4% of β-spodumene instead of felspar lowered the maturing temperature by 70° C. The introduction of 6·8% of lepidolite instead of felspar reduced the maturing temperature by 30°–40° C. without affecting the vitrification range. Further additions of lepidolite did not affect the optimum firing temperature but shortened the vitrification range by 30°–40°. (4 figs., 2 tables.)

15(2)
AUTHOR: Shvayko, V. P.

SOV/72-59-2-11/21

TITLE: Utilization of the Semilogarithmic Grid in the Investigation of Porcelain With Respect to Transparency (Primeneniye polulogarifmicheskoy setki pri issledovanii farfora na prosvechivayemost')

PERIODICAL: Steklo i keramika, 1959, Nr 2, pp 34-36 (USSR)

ABSTRACT: For the elaboration of his investigation method the author availed himself of the data published by N. P. Bogoroditskiy, I. D. Fridberg, G. I. Skanavi (Ref 1), concerning the graphic dependence of the specific volume resistance in solid dielectrics on temperature. The dependence between transparency and thickness of a porcelain body is expressed by an exponential function, as becomes evident from G. K. Tereshchenko, G. V. Shutyy paper (Ref 2). The method suggested by the author permits samples of various thickness to be used, which had hitherto not been possible and it also permits the samples to be ground to the same thickness. This had the effect of partially soiling the sample surface and of furnishing wrong experimental results. A specification of raw meterials and chemical composition of the experimental masses

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is given in tables 1 and 2. The samples are shown in figure 1 and their preparation is described in detail. Transparency was determined by means of the GIS-designed device; see B. D. Yegorov's paper (Ref 3). The device scheme is shown and described in figure 2. The determination results of transparency in the experimental masses are specified in table 3 and illustrated graphically in figure 3.
Conclusions: Samples of various thickness may be employed with the method suggested. The adoption of the semilogarithmic grid permits errors to be detected in the course of the experiments. The GIS device gave proof of good properties and is recommended for use by laboratories working for the fine-ceramic industry. Both the above method and the device may also be used for checking glazings. There are 3 figures, 3 tables, and 5 Soviet references.

SHVAYKO, V.P.

Black glaze for porcelain. Stek.i ker. 18 no.8:33-35 Ag '61. (MIRA 14:8)

(Glazes) (Porcelain)

L 25488-66 EWT(1)/EWT(m)/T/EWP(t) IJP(c) JD/JW

ACC NR: AP6009679 SOURCE CODE: UR/0181/66/008/003/0883/0887

AUTHOR: Shelykh, A. I.; Artemov, K. S.; Shvayko-Shvaykovskiy, V. Ye.

ORG: Institute of Semiconductors AN SSSR, Leningrad (Institut poluprovodnikov AN SSSR); Institute of Chemistry of Silicates AN SSSR, Leningrad (Institut khimii silikatov AN SSSR)

TITLE: Electric properties of single crystals of cobalt oxide at high temperatures and their dependence on the partial pressure of the oxygen

SOURCE: Fizika tverdogo tela, v. 8, no. 3, 1966, 883-887

TOPIC TAGS: cobalt compound, single crystal, electric conductivity, thermal emf, Hall effect, carrier density, crystal defect

ABSTRACT: The authors investigated the conductivity and the thermal emf coefficient of single crystal p-type CoO in the temperature range 900--1500K, and also its dependence on the partial pressure of the oxygen in the surrounding medium at 700K. Single crystals measuring 0.4 x 0.7 x 10 mm were used for measurements of the electric conductivity and the thermal emf, and crystals measuring 0.5 x 1.8 x 4 mm were used for measurements of the Hall effect. The electric parameters were measured by a potentiometer method using both alternating and direct current, and the Hall effect was measured in a constant magnetic field. The partial pressures of the oxygen ranged from 1 to 1 x 10^{-5} atmospheres. The electric conductivity exhibited a linear decrease with increasing reciprocal of the temperature. The increase in conductivity,

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L 25488-66
ACC NR: AP6009679 /

whether due to a change in temperature or to a change in the partial pressure of the oxygen, was always accompanied by a decrease in the coefficient of differential thermal emf. In the impurity conductivity region, the behavior of the electric resistivity was determined essentially by the carrier density and not by their mobility. From the measurements of the dependence of the electric conductivity on the partial pressure of the oxygen, it was also possible to determine the character of the defects occurring in the single-crystal CoO. At pressures 160--775 mm Hg the defects are essentially of the (Co^{3+} - Co vacancy) and (Co^{3+}) type. The authors thank V. P. Zhuze for valuable advice and a discussion. Orig. art. has: 2 figures and 2 formulas.

SUB CODE: 20/ SUBM DATE: 06Aug65/ ORIG REF: 003/ OTH REF: 017

Card 2/2 LO

L 58704-65 EWP(e)/EWT(m)/EWP(w)/EWA(d)/EPR/T/EWP(t)/EWP(k)/EWP(z)/EWP(b)
Pf-4/Ps-4 IJP(c) JD/JG

ACCESSION NR: AP5016589 UR/0363/65/001/005/0737/0742
546.655'824 + 546.655'763 + 546.655'623

AUTHOR: Shvayko-Shvaykovskiy, V. Ye.; Leonov, A. I.; Shelykh, A. I.

TITLE: Electric and thermogravimetric studies of cerium titanate, chromite, and aluminate having a perovskite structure

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 1, no. 5, 1965, 737-742

TOPIC TAGS: cerium titanate, cerium chromite, cerium aluminate, perovskite, semiconductor, thermogravimetric analysis, electric conductivity

ABSTRACT: The compounds were prepared by heating pressed powder mixtures of cerium dioxide and the corresponding metal oxide at 1400C (cerium titanate), 1600C (cerium chromite), and 1700C (cerium aluminate) for 3 hr. Trivalent cerium (Ce_2O_3) reacting with the oxides of titanium, chromium, and aluminum forms the following compounds: $Ce_2O_3 \cdot 3TiO_{1.8}$, $CeCrO_3$, and $CeAlO_3$. The oxidation of the three compounds on heating in air was followed thermogravimetrically, and the effect of heating on their electrical conductivity was investigated. Thermogravimetric and x-ray analyses showed that all three compounds decompose

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ACCESSION NR: AP5016589

in air to form the free oxides (CeO_2, TiO_2, Cr_2O_3, and Al_2O_3). Cerium titanate begins to oxidize at about 260C, cerium chromite at about 600C, and cerium aluminate at about 800C. The oxidation of cerium compounds is associated with a marked change in electrical conductivity, which decreases in cerium titanate (n-type conduction) and increases in cerium chromite and aluminate (p-type conduction). Orig. art. has: 6 figures and 1 table.

ASSOCIATION: Institut khimii silikatov Akademii nauk SSSR (Institute of Silicate Chemistry, Academy of Sciences, SSSR); Institut poluprovodnikov Akademii nauk SSSR (Institute of Semiconductors, Academy of Sciences, SSSR)

SUBMITTED: 22Dec64 ENCL: 00 SUB CODE: IC, EM

NO REF SOV: 002 OTHER: 003

Card 2/2

L 29606-66 EWT(m)/ETC(f)/T/EWP(e)/EWP(t)/ETI IJP(c) AT/WH/JH/JD/JG
ACC NR: AP6011322 (A) SOURCE CODE: UR/0363/66/002/003/0517/0523

AUTHOR: Leonov, A. I.; Andreyeva, A. B.; Shvayko-Shvaykovskiy, V. Ye.; Keler, E. K.

ORG: Institute of Silicate Chemistry im. I. V. Grebenshchikova, Academy of Sciences SSSR (Institut khimii silikatov Akademii nauk SSSR)

TITLE: High temperature chemistry of cerium in Al_2O_3, Cr_2O_3, Ga_2O_3 cerium oxide systems

SOURCE: AN SSSR. Izvestiya. Neorganicheskiye materialy, v. 2, no. 3, 1966, 517-523

TOPIC TAGS: cerium, aluminum, chromium, gallium, oxide, cerium compound

ABSTRACT: The effect of temperature (up to 2600°C) on structural properties of mixed oxide systems composed of CeO_2 and Al_2O_3, Cr_2O_3, or Ga_2O_3 was studied in air and hydrogen atmospheres. The phase relationships in the Ce_2O_3-Al_2O_3 system are shown in fig. 1. The phase relationships in Ce_2O_3-Cr_2O_3 systems are shown in fig. 2. It was found that CeO_2 does not form chemical compounds with oxides of Al, Cr, and Ga. Above 1650°C in air atmosphere, mixtures of oxides (e. g., Ce_2O_3-Al_2O_3, Ce_2O_3-Cr_2O_3, and Cl_2O_3-Ga_2O_3) form perovskite-type compounds ($CeAlO_3$, $CeCrO_3$, and $CeGaO_3$) admixed with the corresponding starting oxides. Pure $CeAlO_3$ and $CeCrO_3$ were obtained in a reducing atmosphere. Pure cerium gallite was synthesized by fusing a mixture of CeO_2 with Ga_2O_3 and

UDC: 546.655.3+546.763+546.683+546.623

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L 29606-66
ACC NR: AP6011322

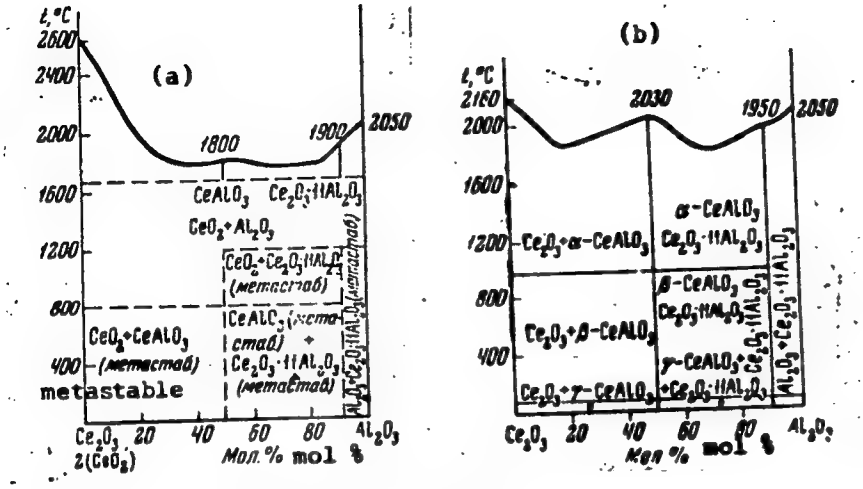


Fig. 1. a--in air; b--in hydrogen.

Card 2/3

L 29606-66
ACC NR: AP6011322

metallic Ga in a sealed evacuated ampoule. $CeAlO_3$ and $Ce_2O_3 \cdot 11Al_2O_3$ form in the

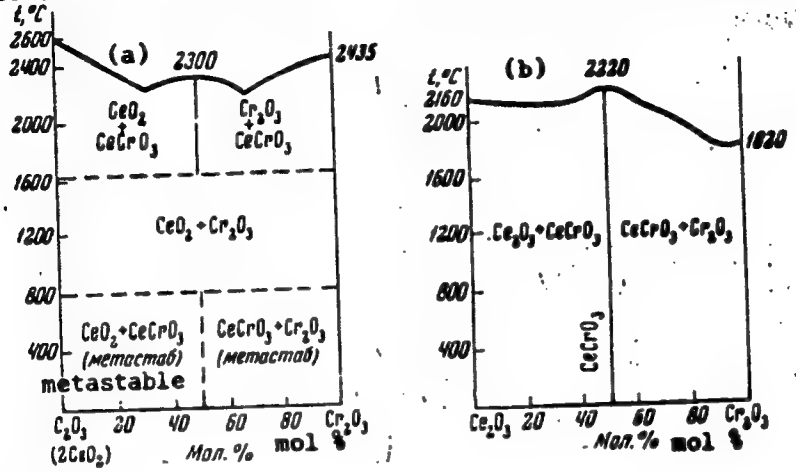
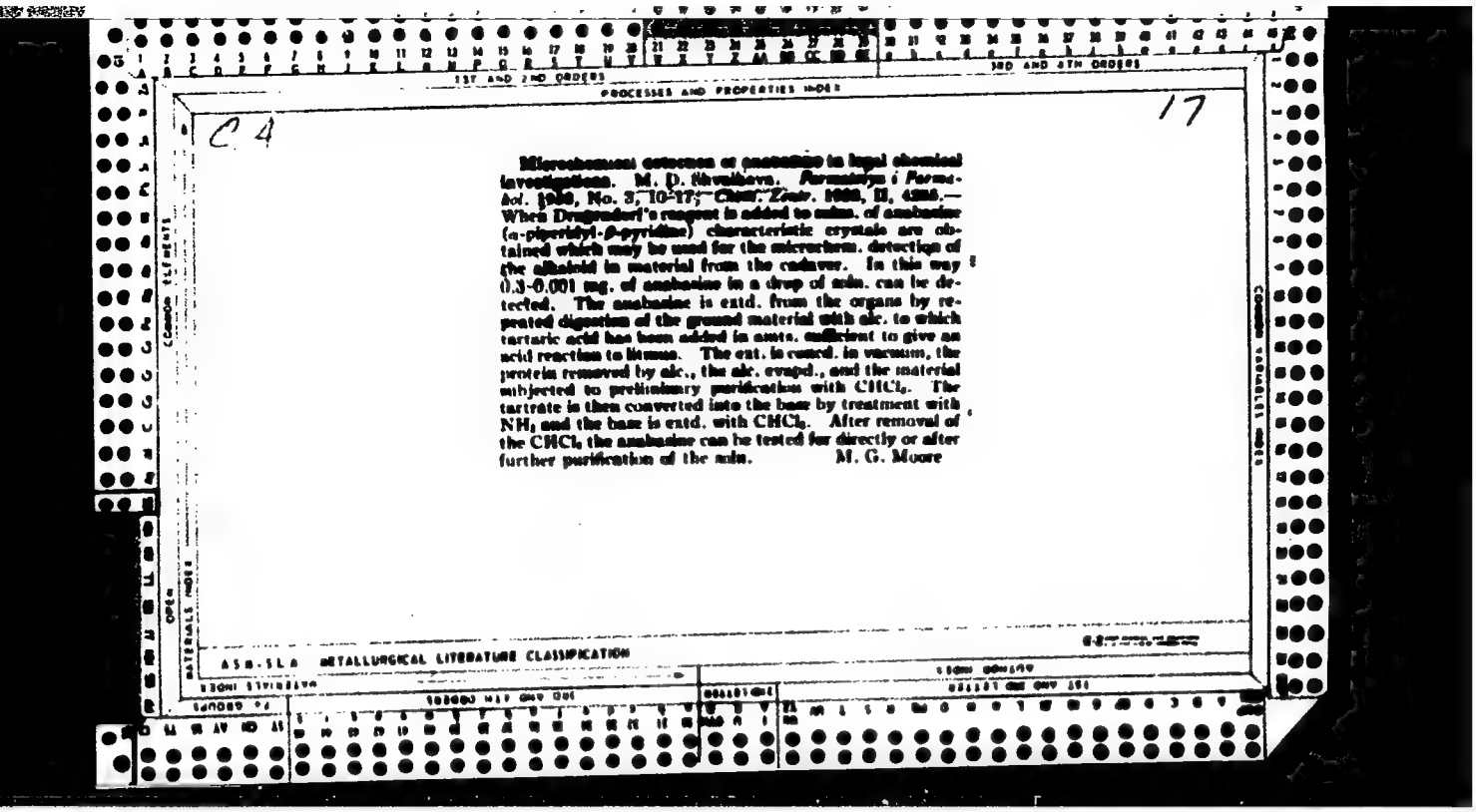


Fig. 2. a--air; b--hydrogen.

Ce_2O_3-Al_2O_3 system. Only one compound with a 1:1 ratio is formed in each of the Ce_2O_3-Cr_2O_3 and Ce_2O_3-Ga_2O_3 systems. Orig. art. has: 6 figures, 2 tables.

SUB CODE: 07/ SUBM DATE: 27Jun65/ ORIG REF: 007/ OTH REF: 005

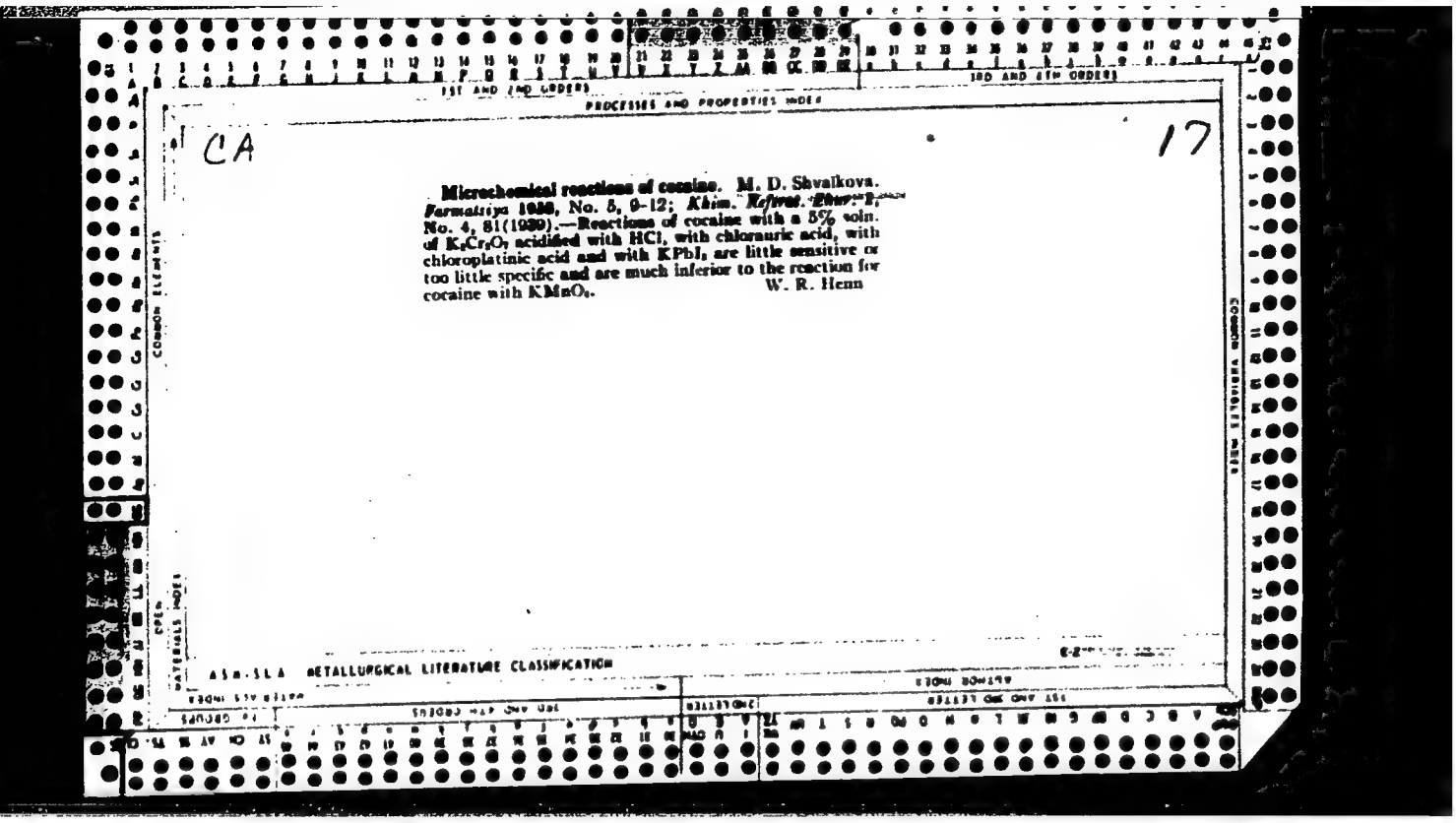
Card 3/3 CC



C 4

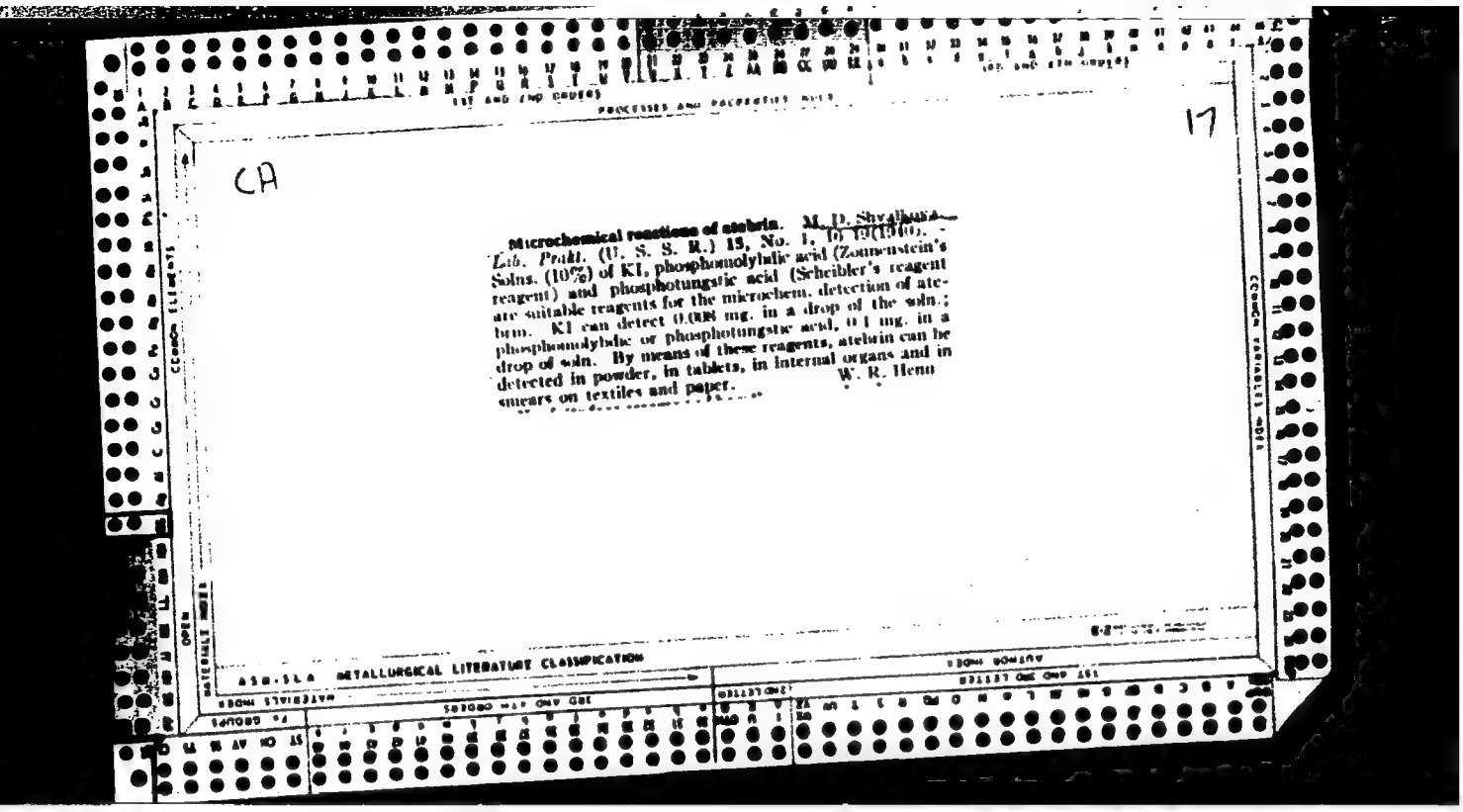
17

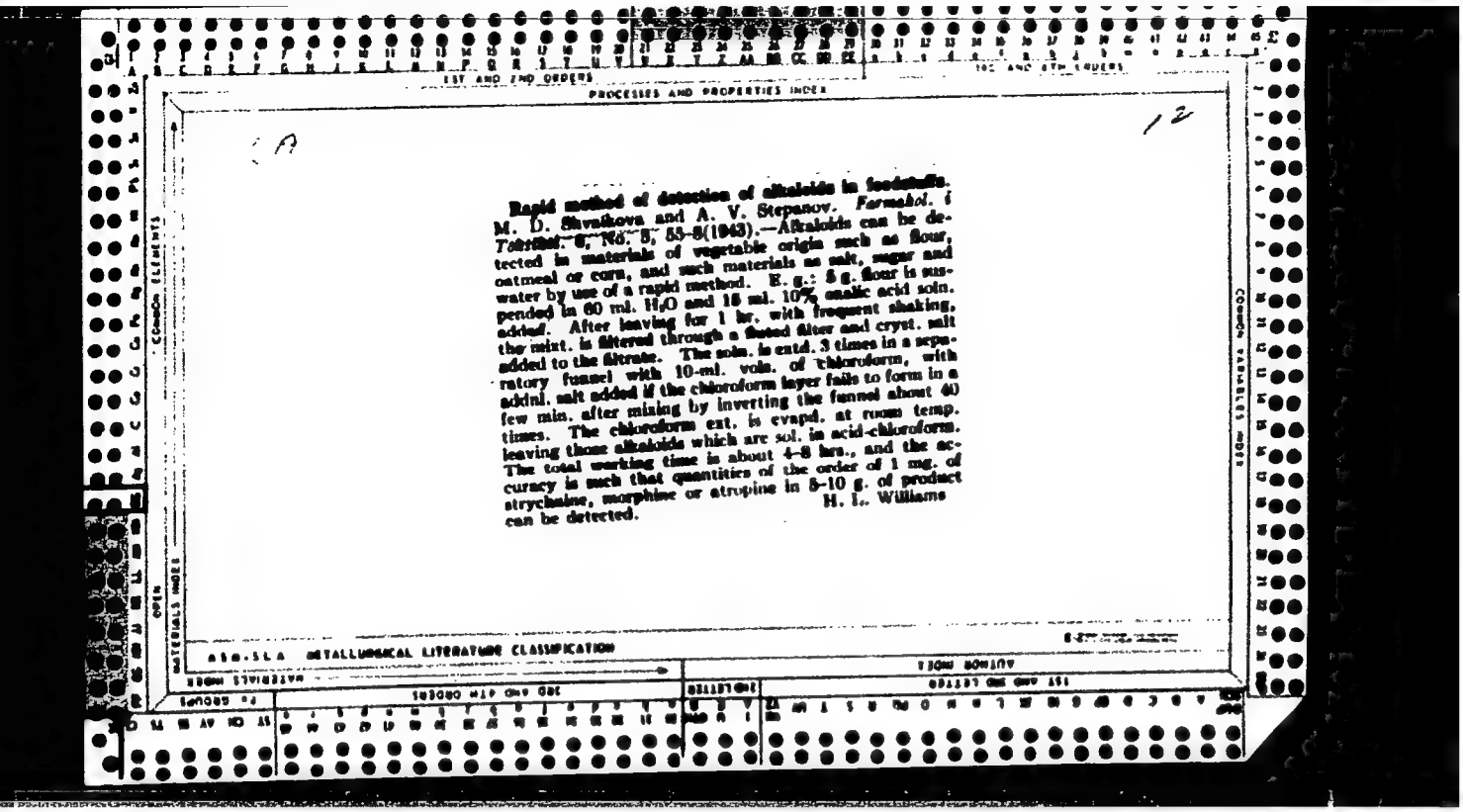
Microchemical detection of ganglefine in legal chemical investigations. M. D. Shvalbova. *Farmatsiya i Farmakol.* 1938, No. 3, 10–17; *Chem. Zentr.* 1939, II, 4288.—When Dragendorff's reagent is added to solns. of anabasine (α-piperidyl-β-pyridine) characteristic crystals are obtained which may be used for the microchem. detection of the alkaloid in material from the cadaver. In this way 0.3–0.001 mg. of anabasine in a drop of soln. can be detected. The anabasine is extd. from the organs by repeated digestion of the ground material with alc. to which tartaric acid has been added in amts. sufficient to give an acid reaction to litmus. The ext. is concd. in vacuum, the protein removed by alc., the alc. evapd., and the material subjected to preliminary purification with $CHCl_3$. The tartrate is then converted into the base by treatment with NH_3 and the base is extd. with $CHCl_3$. After removal of the $CHCl_3$ the anabasine can be tested for directly or after further purification of the soln. M. G. Moore



CA 17

Microchemical reactions of cocaine. M. D. Shvalkova. *Farmatsiya* 1939, No. 5, 9-12; *Khim. Referat. Zhur.* 2, No. 4, 81(1939).—Reactions of cocaine with a 5% soln. of $K_2Cr_2O_7$ acidified with HCl, with chloroauric acid, with chloroplatinic acid and with KPbI$_3$ are little sensitive or too little specific and are much inferior to the reaction for cocaine with $KMnO_4$. W. R. Henn





PROCESSES AND PROPERTIES INDEX

12

Rapid method of detection of alkaloids in foodstuffs. M. D. Shvathova and A. V. Stepanov. *Farmakol. i Toksikol.* 6, No. 5, 53–8(1943).—Alkaloids can be detected in materials of vegetable origin such as flour, oatmeal or corn, and such materials as salt, sugar and water by use of a rapid method. E. g.: 5 g. flour is suspended in 60 ml. H_2O and 15 ml. 10% oxalic acid soln. added. After leaving for 1 hr. with frequent shaking, the mixt. is filtered through a fluted filter and cryst. salt added to the filtrate. The soln. is extd. 3 times in a separatory funnel with 10-ml. vols. of chloroform, with addnl. salt added if the chloroform layer fails to form in a few min. after mixing by inverting the funnel about 40 times. The chloroform ext. is evapd. at room temp. leaving those alkaloids which are sol. in acid-chloroform. The total working time is about 4–8 hrs., and the accuracy is such that quantities of the order of 1 mg. of strychnine, morphine or atropine in 5–10 g. of product can be detected.

H. L. Williams

ASM-SLA METALLURGICAL LITERATURE CLASSIFICATION

Chemistry, Legal

Current problems of forensic chemistry in the U.S.S.R. Apt. delo no. 1, 1952.

Monthly List of Russian Accessions. Library of Congress
November 1952 UNCLASSIFIED

1. SHVAYKOVA, M. D. Prof.

2. USSR (600)

4. Chemistry, Legal-Study and Teaching

7. First course for the training of forensic chemists.
Apt. delo no. 5, 1952

9. Monthly List of Russian Accessions, Library of Congress, January 1953. Unclassified.

VASIL'YEVA, A.A.;SHVAYKOVA, M.D.

Mercury loss in general medico-legal chemical analysis. Aptech. delo, Moskva 2 no. 1:46-49 Jan-Feb 1953. (CIML 24:1)

1. Of the Scientific-Research Institute of Forensic Medicine (Director -- Prof. V. I. Prozorovskiy), Ministry of Public Health USSR.

Certain problems connected with isolation of mercury compounds from biological material. A. A. Vasil'eva and M. D. Shvalkova. *Aptechnoe Delo* 4, No. 5, 23-6(1955).— The destruction of org. material often entails Hg losses. The following technique prevents it. A sample (100 g.) of tissue (liver or muscle) is placed in a 500-cc. Kjeldahl flask, wetted with water, and covered with a mixt. of 25 cc. of H_2SO_4 and 50 cc. of HNO_3. It is heated over a small flame until there is no more foaming. The flame is increased and an addnl. amt. of HNO_3 (150-170 cc.) is added gradually through a separatory funnel or through an attachment which carries 2 glass tubes leading to flasks which contain 25 cc. of 25% H_2SO_4 and extending below the surface of the fluid. The oxidation requires from 14 to 30 hrs. After removal of nitrogen oxides the acid is dild. with water to 25% and extd. 4 times with iodine (0.1%) in ether using 40 cc. each time. The ethereal exts. are washed with water until neutral in reaction, transferred to a porcelain dish, the ether evapd., and the detn. of Hg carried out. The fluid in the absorption flasks is kjeldahlized and treated as described before. A. S. Mirkin

CH

(1)

SHVAYKOVA, M.D.professor.

Training of forensic chemists. Apt. delo. 4 no.6:27-28 N-D '55. (MLRA 9:1)

(JURISPRUDENCE, MEDICAL,
train. of forensic chemists)
(CHEMISTRY,
train. of forensic chemists)

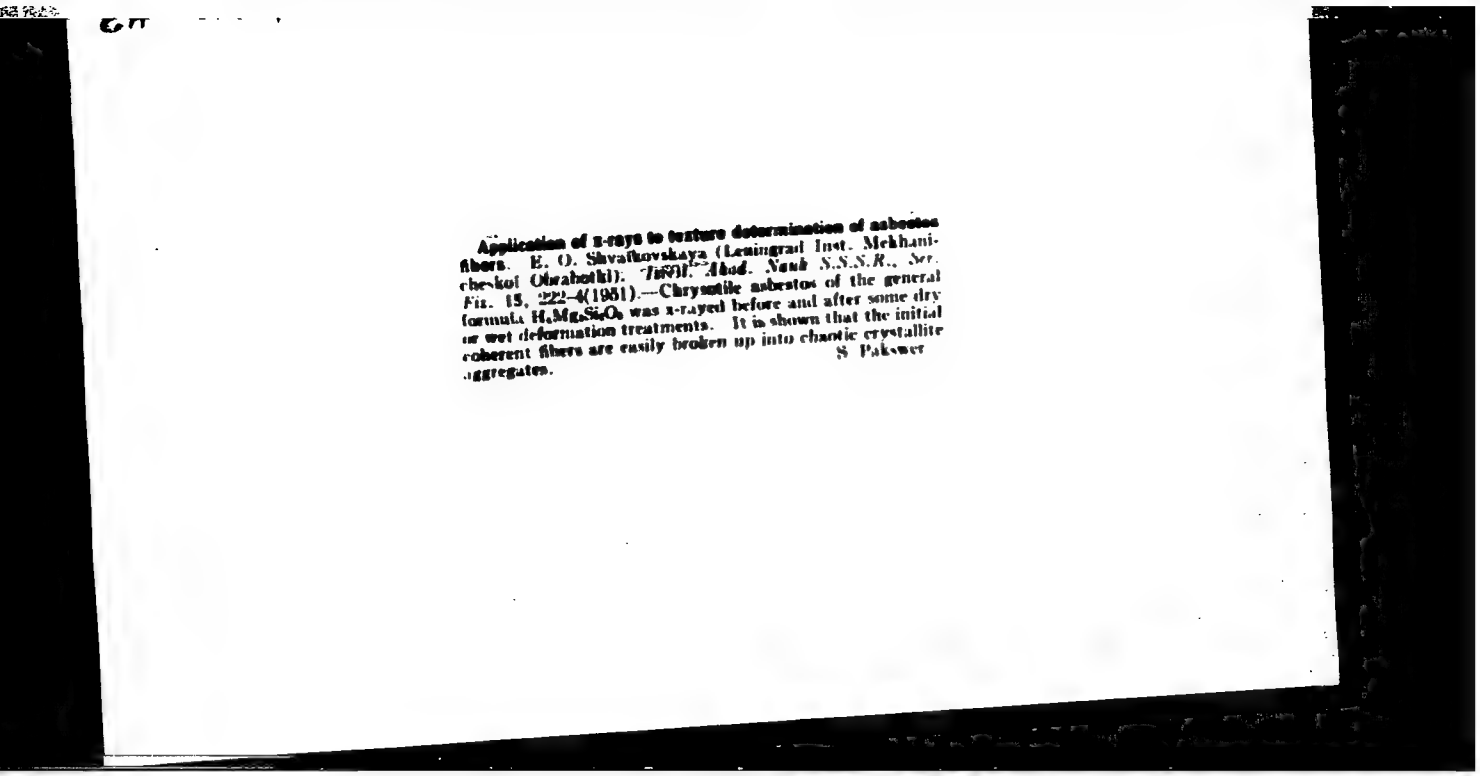
SHVAYKOVA, M.D., professor

Russian manuals and textbooks of legal chemistry. Apt.delo 5 no.2: 35-37 Mr-Ap '56. (MLRA 9:7)

1. Iz kafedry sudebnoy khimii Moskovskogo farmatsevticheskogo instituta Ministerstva zdravookhraneniya RSFSR.
(CHEMISTRY, LEGAL)

SHVAYKOVA, M.D., professor

Achievements in the field of forensic chemistry in the U.S.S.R. during the past 40 years. Apt.delo 6 no.5:31-35 S-O '57. (MIRA 10:11)
(CHEMISTRY, LEGAL)



Application of x-rays to texture determination of asbestos fibers. E. O. Shvaikovskaya (Leningrad Inst. Mekhanicheskoi Obrabotki). *Izvest. Akad. Nauk S.S.S.R., Ser. Fiz.* 15, 222–4(1951).—Chrysotile asbestos of the general formula $H_4Mg_3Si_2O_9$ was x-rayed before and after some dry or wet deformation treatments. It is shown that the initial coherent fibers are easily broken up into chaotic crystallite aggregates. S. Paksver

Shvaykovskaya, Ye. O.

USSR/Solid State Physics - Structure of Deformable Materials. E-9

Abs Jour : Referat Zhur - Fizika, No 5, 1957, 11856

Author : Shvaykovskaya, Ye.O.

Inst : Institute of Machining, USSR.

Title : X-ray Diffraction Investigation of the Distortions of the Crystalline Lattice of Mineral Fibers.

Orig Pub : Izv. AN SSSR, ser. fiz., 1956, 20, No 6, 706-707

Abstract : Mineral fibers of asbestos were bent at various rates. X-ray photographs taken of the specimens that experienced slow bending differ considerably from X-ray photographs of natural fibers, particularly in the presence of Debye rings. X-ray photographs of specimens subjected to rapid bending, and also specimens deformed by impact, show that the lattice structure hardly changes, in these cases. It is concluded that the fundamental role in the distortion

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[illegible] Materials. E-9

Abs Jour : Ref Zhur - Fizika, No 5, 1957, 11856

of the crystalline lattice is played not by the [illegible] of the applied force, but by its duration.

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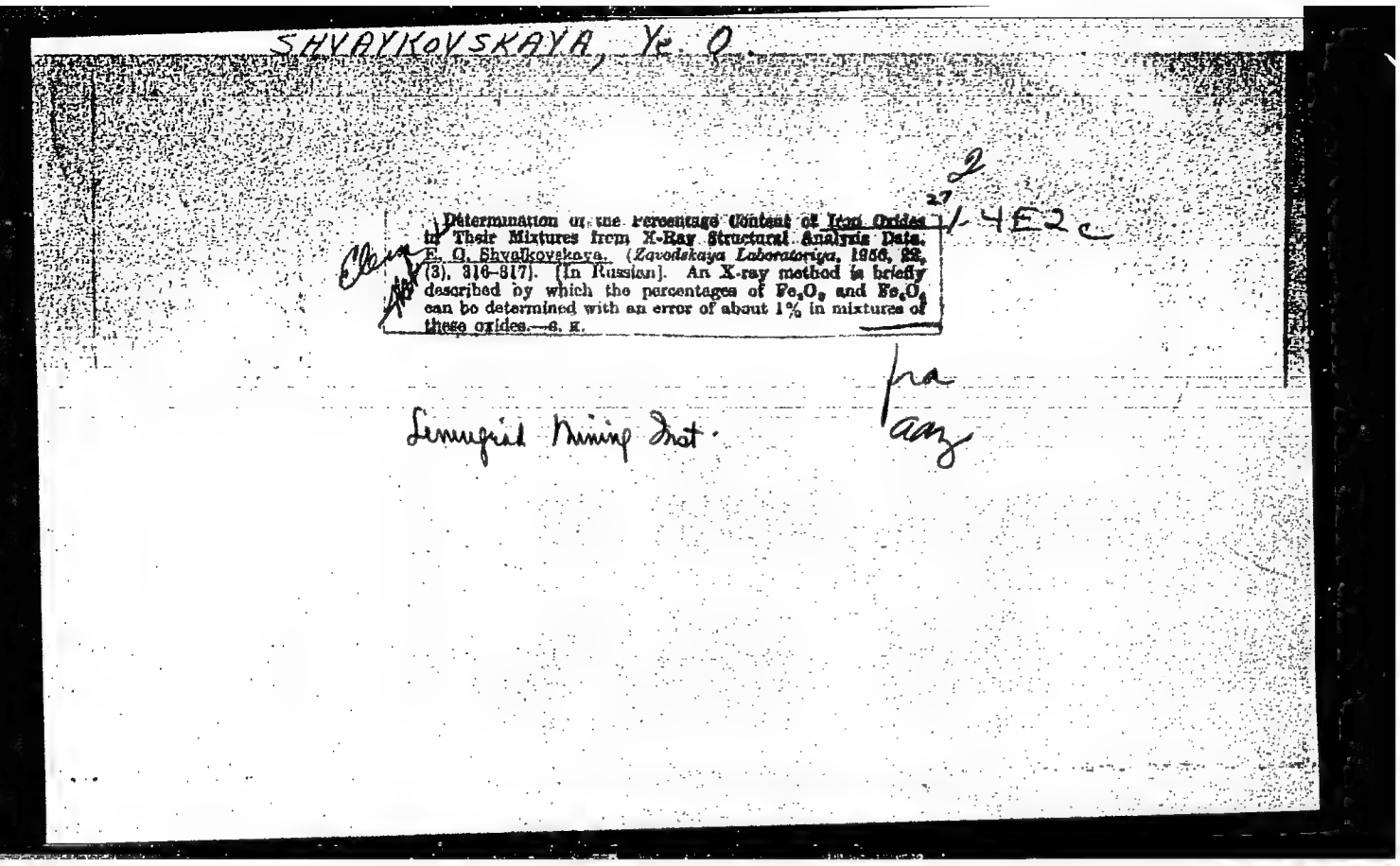

SHVAYKOVSKAYA, Ye. O.

Determination of the Percentage Content of Iron Oxides in Their Mixtures from X-Ray Structural Analysis Data. E. O. Shvaikovskaya. (*Zavodskaya Laboratoriya*, 1956, 22, (3), 316–317). [In Russian]. An X-ray method is briefly described by which the percentages of Fe_2O_3 and Fe_3O_4 can be determined with an error of about 1% in mixtures of these oxides.—G. K.

Leningrad Mining Inst.

SHVAYKOVSKAYA, Ye.O.

X-ray diffraction study of distortions of the crystal lattice of asbestos fiber. Zap. LGI 36 no.3:38-42 '58. (MIRA 16:5)
(X-ray diffraction examination) (Dislocations in crystals)
(Asbestos)

24.7100

1959
SOV/70-4-5-21/36

AUTHORS: Revnov, B. I., Shvajkovskaya, Ye. O.

TITLE: Static and Dynamic Deformations of Muscovite

PERIODICAL: Kristallografiya, 1959, Vol 4, Nr 5, pp 756-760 (USSR)

ABSTRACT: The well known properties of muscovite, its use, and parting of its sheets by impact or pressure transverse to the basal cleavage, i.e., the impact and pressure figures, controlled by the directions of imperfect cleavages, are cited. In both types of deformations, there emerge rectilinear fractures or their net which in impact figures are parallel to [010], [110], [1$\bar{1}$0], and in the figures resulting of spot pressure to [100], [120], [1$\bar{2}$0]. No parting parallel to the directions of impact figures was found to occur in natural crystals from the muscovite deposits of the USSR if the results of blasting are disregarded. On the other hand, the natural parting, controlled by the directions of spot pressure figures, occurs frequently, and produces the so called

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"banded parting" or ruled mica. The latter seem to result due to tectonic deformations experienced by the muscovite-bearing dikes. Why do the figures resulting of impact and pointed pressure adopt different fracture patterns? The authors found that asbestos deformed by a rapid bending reveals the same patterns on the X-ray photographs as the fibers deformed by an impact, while the fibers deformed slowly showed quite different patterns. Thus, the patterns were the functions of the magnitude of a force and of the duration of its action. Although no definite boundary is established, the authors use terms static and dynamic deformations for the slow and rapid deformations which produced the differing patterns. In connection with impact figures they also use the term impulse of a force. Having examined the fracture patterns, produced in muscovite by impact and by spot pressure, the authors found that both patterns may result due to identical actions if the orientations of the force with respect to the positions of imperfect cleavages or the elasticities of

the sublayers below the mica sheets differ. In some cases both patterns emerged around one and the same impact point. The X-ray diffraction patterns confirmed the visual observations. They also disclosed that the structure distortions (width of diffuse spots) are less in the case of impact. The specimens deformed by pressure showed long diffraction spots. This conforms with the observations of F. Rinne who interpreted elongation of the spots by curving of the reflecting atomic planes. There are 7 figures; and 4 references, 3 Soviet, 1 German.

ASSOCIATION: Leningrad Mining Institute (Leningradskiy gornyy institut)

SUBMITTED: July 13, 1958

S/058/62/000/006/072/136
A061/A101

AUTHORS: Shvaykovskaya, Ye. O., Nikolayeva, A. I., Shalyt, T. D.

TITLE: X-ray diffraction study of deformed mica substances

PERIODICAL: Referativnyy zhurnal, Fizika, no. 6, 1962, 20, abstract 6E173 ('Zap. Leningr. gorn. in-ta", 1959 (1961), v. 37, no. 3, 105-108)

TEXT: The mechanism of plastic deformation in mica substances has been studied by X-rays. It is shown that distortions in the crystal structure depend on form and rate of deformation. Structural distortions of deformed mica substances are considerably smaller in impact tests than in compression. In bent plates distortions are smaller where the rate of deformation is higher. The momentum of applied forces plays a decisive role in the propagation of plastic deformation.

[Abstracter's note: Complete translation]

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S/834/61/037/003/005/005
B104/B186

AUTHORS: Shvaykovskaya, Ye. O., Nikolayeva, A. I., Shalyt, T. D.

TITLE: An x-ray diffraction study in deformed micas

SOURCE: Leningrad. Gornyy institut. Zapiski. v. 37, no.3. Moscow, 1961. Matematika, fizika. 105 - 108

TEXT: The mechanism of plastic deformation was studied in muscovite specimens by the Laue method. The mica specimens (0.13 mm thick) were deformed by bending, compression and impact. Differences in the Laue patterns obtained for various kinds of deformation were not solely due to the different nature of static and dynamic deformation; for even within the impact test series different patterns were observed. In bending tests, e. g., it was shown that they also depend on the deformation rate. As the bending tests proved difficult to carry out it was chiefly compression and impact tests that were made. These revealed less distortion of the lattice after impact tests than after compression tests, but the six-pronged stars at the center of impact proved that impacts too may cause strong lattice distortions. In bent plates of mica the distortion of the lattice is smaller where the deformation rate is higher. The momentum of

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S/834/61/037/003/005/005
An x-ray diffraction study in ... B104/B186

the forces applied is important for the propagation of plastic deformation. The results are fully consistent with those obtained with asbestos fibers, as described by the author in a previous study. There are 2 figures.

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SHVAYKOVSKIY, Vitaliy Vladimirovich; SILKIN, A.N., red.; GRIGOR'YEVA, A.I., red.; KARYAKINA, M.S., tekhn.red.

[Present-day motorcycles; design and operation of motorcycles and motor scooters] Sovremennye mototsikly; ustroistvo i ekspluatatsiia mototsiklov i motorollerov. Moskva, Izd-vo DOSAAF, 1958. 251 p. (MIRA 12:3)
(Motorcycles) (Motor scooters)

SHVAYKOVSKIY, Vitaliy Vladimirovich; GRIGOR'YEVA, A.I., red.; KARYAKINA, M.S., tekhn. red.

[Modern motorcycles; construction of motrcycles and motor scooters] Sovremennye mototsikly; ustroistvo mototsiklov i motorollerov. Izd.2., perer. Moskva, Izd-vo DOSAAF, 1961. 287 p. (MIRA 15:2)
(Motorcycles) (Motor scooters)

SHVAYKOVSKIY, Vitaliy Vladimirovich; PETROVSKAYA, Ye.K., red.; SHPEKTOROVA, Ye.I., tekhn. red.

[Motorcyclist's manual for beginners]Uchebnik nachinaiushchego mototsiklista. Izd.4., perer. i dop. Moskva, Izd-vo "Fizkul'tura i sport," 1962. 181 p. (MIRA 16:2)
(Motorcycles)

SOV/86-58-11-10/37

AUTHOR: Shvaylakh, A. Ya., Lt Col

TITLE: Interception of a Single Aircraft (Perekhvat odinochnogo samoleta)

PERIODICAL: Vestnik vozdushnogo flota, 1958, Nr 11, pp 26-29 (USSR)

ABSTRACT: A detailed description of a classroom exercise on the subject: Combat actions of a fighter flight when intercepting a single scout (bomber) that is escorted by a flight of fighters. Three diagrams.

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BOL'SHAKOV, Anatoliy Stepanovich; SARIN, Valeriy Ivanovich; SHVAYNSHTEYN, Boris Simonovich; POMOMAREV, V.S., inzh., retsenzent; ZAZOVSKIY, D.G., inzh., retsenzent; MAKAROV, M.S., inzh., retsenzent; POPOV, G.V., inzh., retsenzent; KURBATOV, A.I., retsenzent; KITAYEVA, Z.A., inzh., retsenzent; SDOBNIKOV, Ye.F., retsenzent; KOVALEV, A.K., inzh., retsenzent; KESAREV, A.P., inzh., retsenzent; KISELEVA, N.P., inzh., red.; GROMOV, S.A., kand. tekhn. nauk, red.; SHCHERBACHEVICH, G.S., inzh., red.; USENKO, L.A., tekhn. red.

[Shunting diesel locomotives]Manevrovye teplovozy. Moskva, 1962. 383 p. (MIRA 15:6)

(Diesel locomotives)

ZAYDENBERG, Ya.; SHVAYSHTEYN, Ye.

Glazing prints. Sov. foto 19 no.6:57-58 Je '59. (MIRA 12:9)

(Photographs)